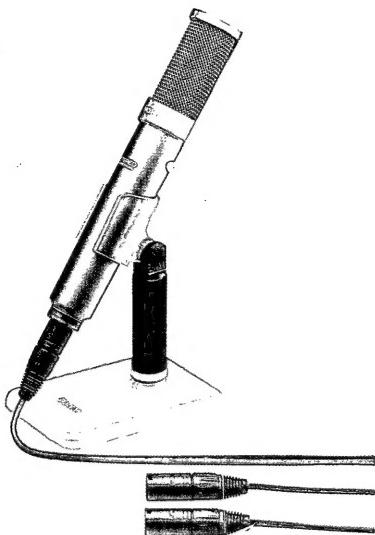


# ECM-999/999PR

## SERVICE MANUAL



US Model

Canadian Model

AEP Model

E Model

ECM-999

US Model

E Model

ECM-999PR

### SPECIFICATIONS

#### General

Type	One-point stereo(employing the Mid-Side system), electret condenser microphone(with back-electret condenser capsules)
Microphone output connector	Cannon XLR-5-12C type (Pin connection: 1.Shield 2.L ch.hot 3.L ch.cold 4.R ch.hot 5.R ch. cold)
Microphone cord	Parallel two core shielded, OFC(Oxygen free copper) With Cannon type connector
Battery	R6 (size AA) battery
Dimensions	40 x 246 mm (Outside diameter x length) (1 ½ x 9 ¾ inches)
Mass	Approx. 385 g (13.5 oz)(including battery)
Supplied accessories	Wind screen (1) Microphone holder (1)(PF½ screw) Microphone cord (1) Adapting cord OFC(Oxygen free copper) Length: Approx. 50 cm (2) (ECM-999 only) Microphone stand screw adapter SAD-35 (1), SAD-34 (1) Carrying case (1) Operating Instructions (1)

#### Performance

Frequency response	20 - 20,000 Hz (See the illustration A.)
Directivity	Mid-Side stereo system Directive angle : 0° to 150° continuously variable (See the illustration B.)
Output impedance	480 ohms ±20%, balanced
Sensitivity(directive angle 120°)	Open circuit output voltage level*1 : -48 ±3dB Effective output level*2 : -50.8 ±3dBm Difference between L and R channel sensitivity: Less than 3dB *1 0dB = 1V/Pa, 1,000Hz (1Pa = 10 <sup>-5</sup> bar = 94dB <sub>SP</sub> L) *2 0dBm = 1mW/Pa, 1,000Hz
Power requirements	Recommended load impedance : More than 3 kilohms Normal operating voltage : 1.5 V, R6 (size AA) battery Minimum operating voltage : Approx. 1 V Battery life : Approx. 80 hours with a Sony RSP (size AA) battery
Noise level	Signal-to-noise ratio : More than 68 dB(1,000 Hz, 1Pa) Inherent noise (Converted to the equivalent input sound level)*3 Wind noise (With wind screen)*4 : Less than 26 dB <sub>SP</sub> L Induction noise from external magnetic field*5 : Less than 10 dB <sub>SP</sub> L

\*3 0 dB<sub>SP</sub>L = 2 x 10<sup>-5</sup>Pa

\*4 Wind noise is the value measured by applying a wind velocity of 2m/s (6.6 ft/s) from all directions to the microphone. The mean value is taken and converted to the equivalent input sound level.

\*5 The external magnetic field induction noise is measured with the microphone placed in an alternating magnetic field of 50 Hz, 1 x 10<sup>-3</sup> T. The maximum noise value is taken and then converted to the equivalent input sound level.

#### Maximum sound pressure input level

Dynamic range	More than 130 dB <sub>SP</sub> L (at 1,000 Hz, 1% distortion)
Operating temperature	More than 104 dB
Storage temperature	0 °C to 40 °C (32 °F to 104 °F) - 20 °C to +60 °C (-4 °F to +140 °F)

#### Optional accessories

Plug adaptor	PC-201M (Miniplug ↔ Phone jack) PC-58S (Stereo miniplug ↔ Phone jack x 2)
--------------	--

Design and specifications are subject to change without notice.

#### Features

- The Mid-Side system\* is employed to give excellent sound image and faithful stereo sound reproduction with less "hole in the middle".
- The directive angle between the left and right channels can be changed progressively from 0° (monaural) to 150° according to the sound source.
- Electret condenser microphone with back-electret condenser capsules permits good sound pick up.
- Mid-Side system**  
The sum of signals of the mid microphone unit (uni-directional) and side microphone unit (bi-directional) and the difference between them are used for R and L channels respectively.

**ELECTRET CONDENSER  
STEREO MICROPHONE  
SONY®**

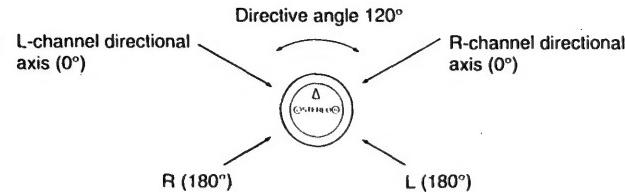


## Frequency Response

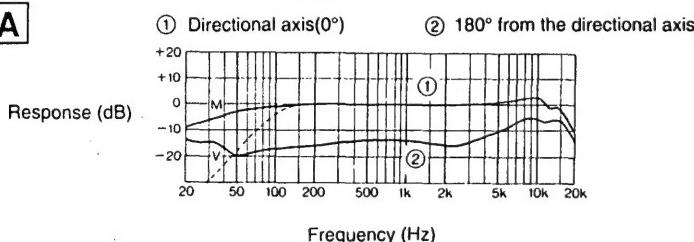
See illustration A.

### Direcitivity

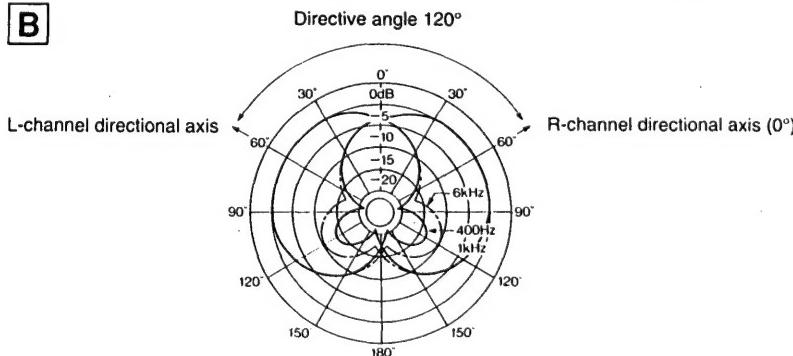
See illustration B.



**A**



**B**



## Battery Installation

### When to replace the battery

When the power is turned on, the battery check indicator lights momentarily. When the battery becomes weak, the indicator remains dimly lit or does not light at all. In this case, replace the battery with a new one.

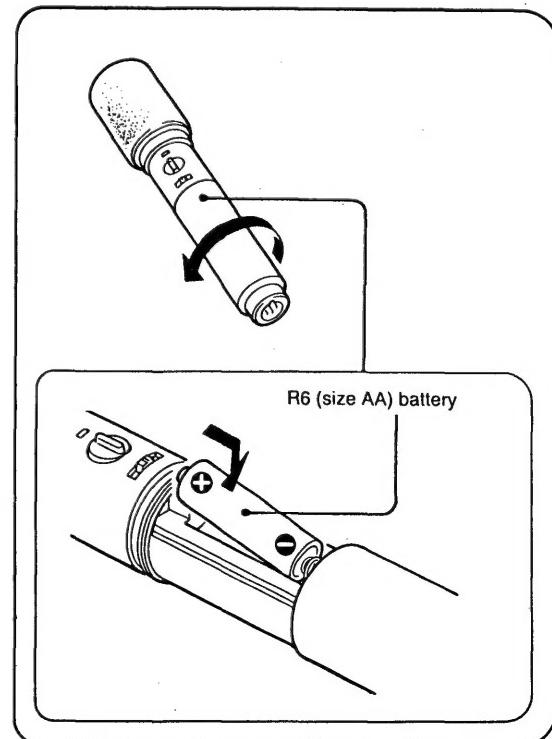
Sony R6P (size AA) battery gives continuous operation of the microphone for about 80 hours.

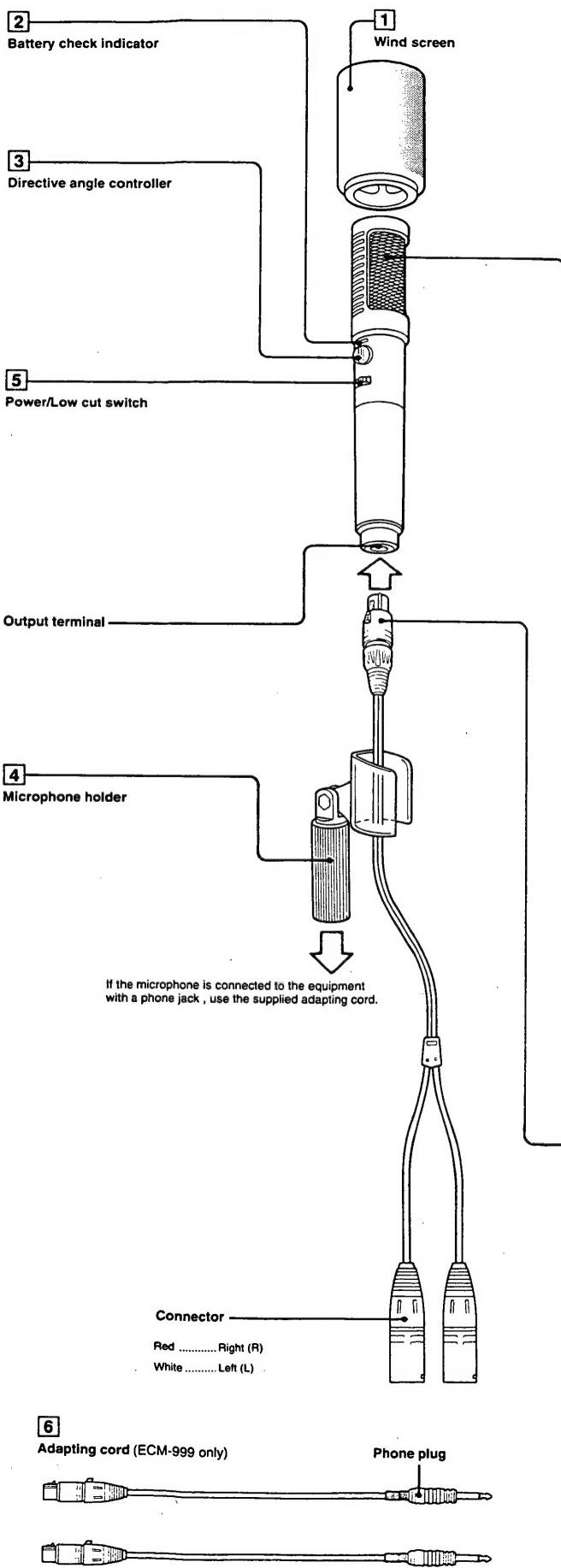
### Notes on battery

To avoid damage to the unit caused by battery leakage and corrosion;

- Install the battery with correct polarity.
- Do not try to recharge batteries.
- Remove the battery if the microphone is not to be used for a long period of time.

In case of battery leakage, wipe off any deposit in the battery compartment before installing a new battery.





## Parts Identifications and Uses

### 1 Wind screen

Attach to reduce wind or breathing noise.

### 2 Battery check indicator

When the power/low cut switch is set to M from OFF, the indicator lights momentarily. This indicates that the battery is usable.

### 3 Directive angle controller

Selects the directive angle between the left and right channels in accordance with sound source or sound level.

Sound sources	Location of a microphone
To record with a monaural tape recorder	0° —
To pick up a narrower sound source e.g. • An instrumental solo • Bird and insect song	90° 120° Close to the sound source
To pick up a wider sound source e.g. • An orchestra, chorus • A moving train, airplane, motor car race • Speeches at a conference • Natural sounds, urban sounds,etc.	120° 150° Rather farther away from the sound source

While picking up sounds from wider (narrower) sound source, avoid moving the microphone itself, so as to maintain the original sound balance.

### 4 Microphone holder

Install to the optional microphone stand.

### 5 Power/Low cut switch

OFF	To turn off the power
M	To pick up sounds such as musical instruments and natural sounds away from the sound source
V	To pick up a human voice more clearly To reduce low range noise such as wind

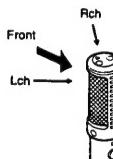
### 6 Adapting cord

If the microphone is connected to the equipment with a phone jack, use the supplied adapting cord.

#### Microphone unit

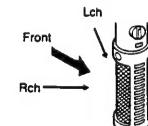
##### How to direct the microphone

Direct the microphone to the sound source vertically.



##### Note

When the microphone is used upside down, L and R outputs are reversed.



#### Connection

##### To attach

1

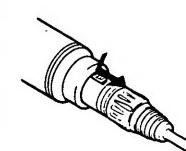
Align the connector with the output terminal of the microphone.

2

Insert the connector until a click is heard.

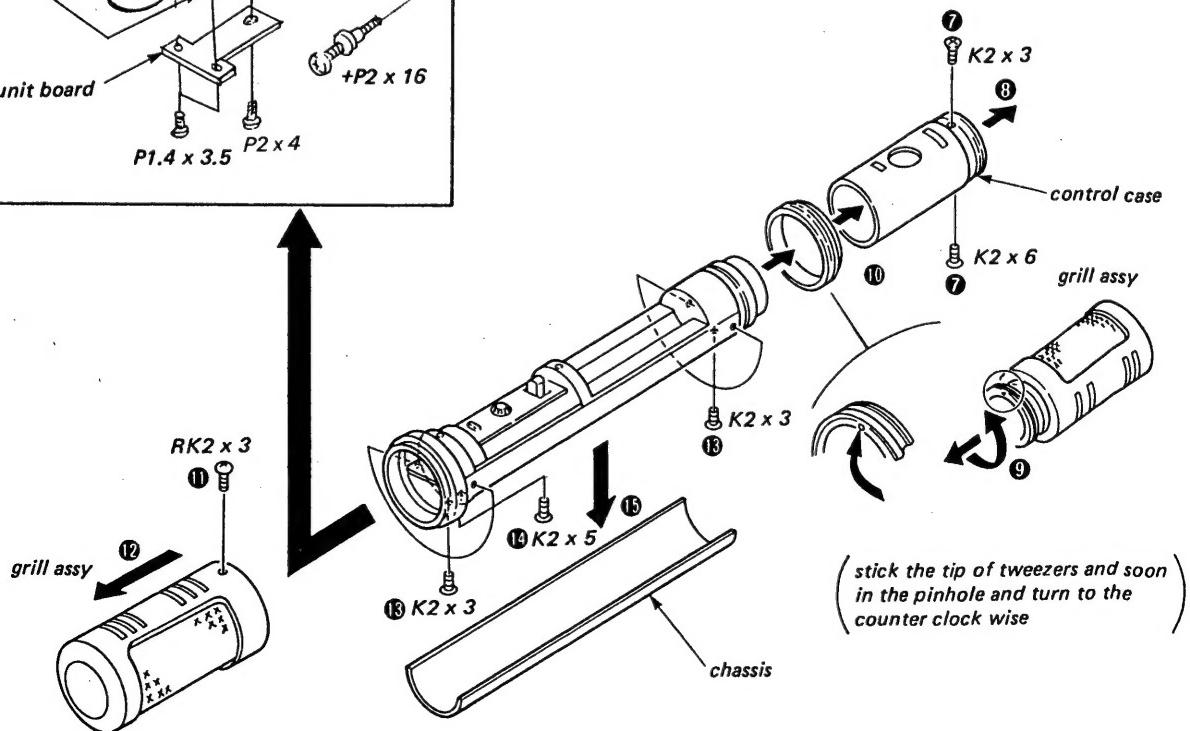
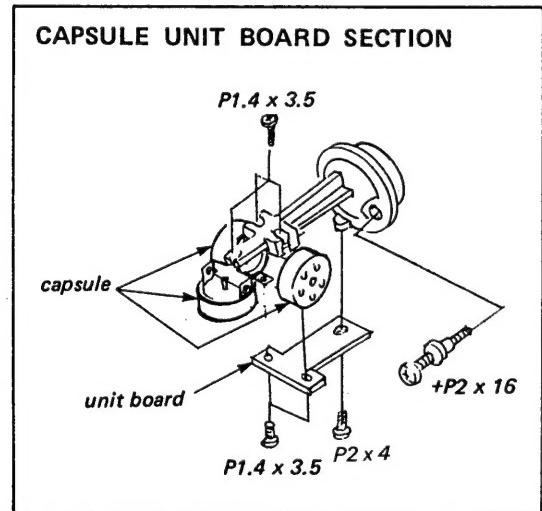
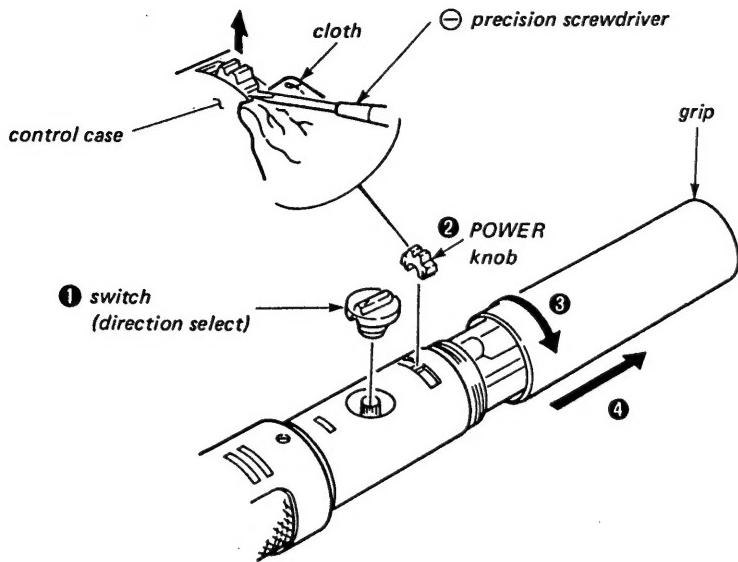
##### To detach

While pressing the projection, pull out the connector.

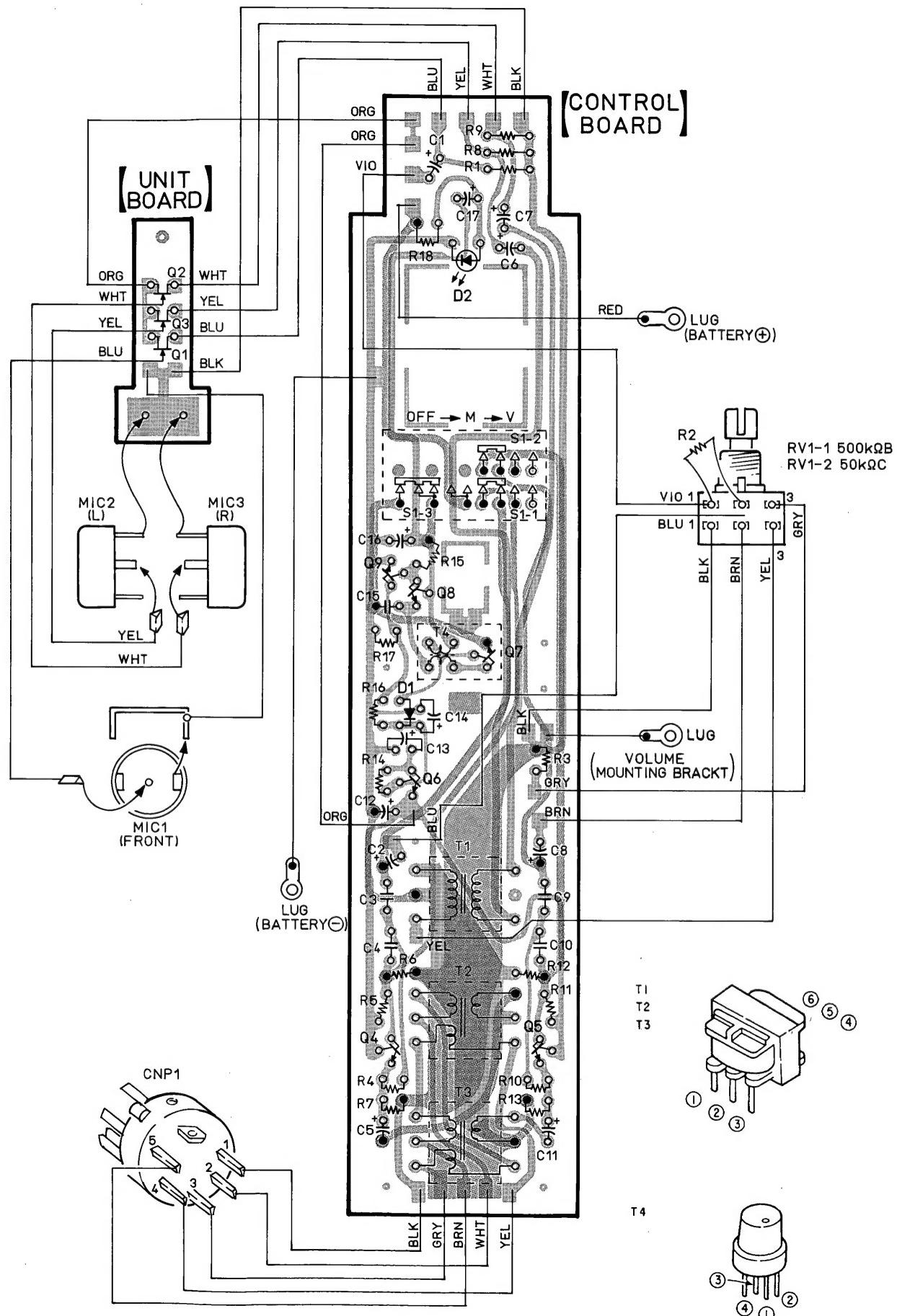


## DISASSEMBLY

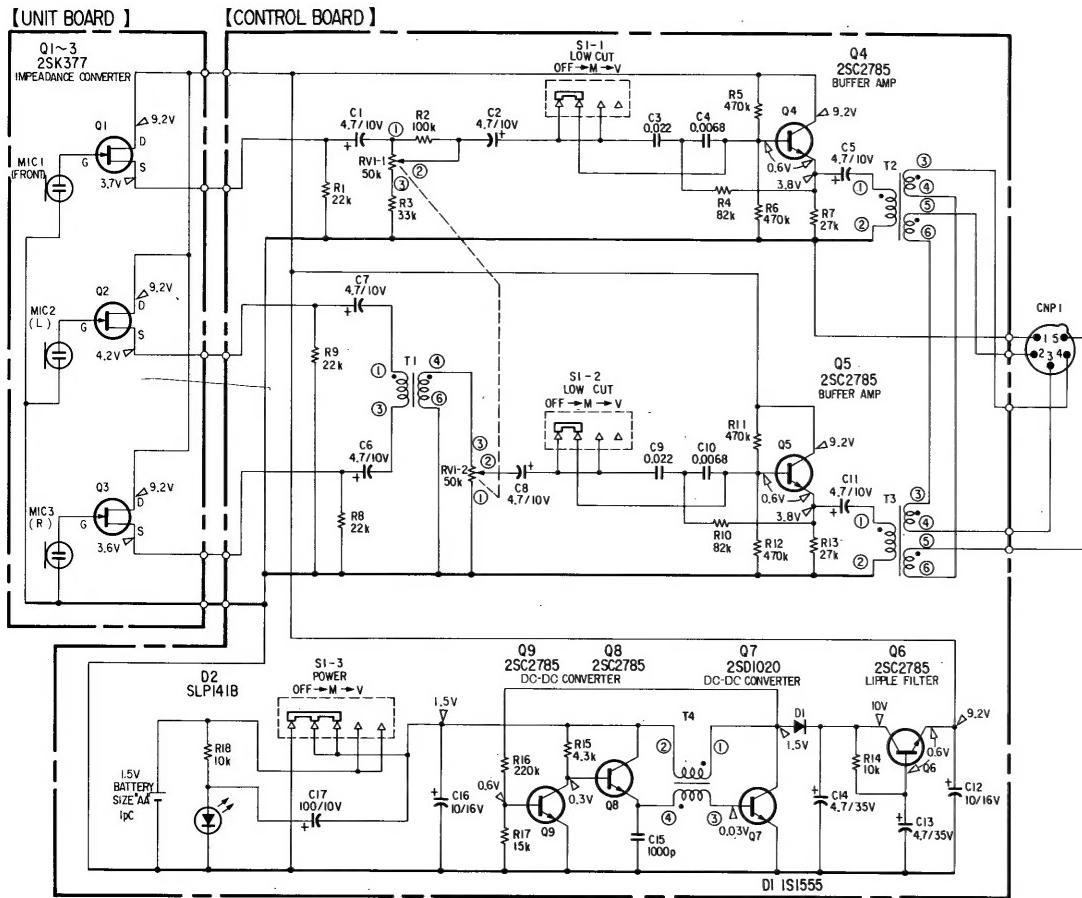
Note: Follow the disassembly procedure in the numerical order given.



## PRINTED WIRING BOARDS



## SCHEMATIC DIAGRAM



### Note on Printed Wiring Board:

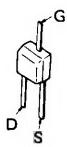
- : parts extracted from the component side.
- : parts extracted from the conductor side.
- : Through hole.
- : Pattern on the side which is seen.
- : Pattern of the rear side.

### Note on Schematic Diagram:

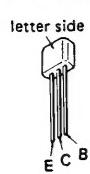
- All capacitors are in  $\mu\text{F}$  unless otherwise noted. pF:  $\mu\mu\text{F}$ . 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, 1/4W unless otherwise noted. k $\Omega$ : 1000 $\Omega$ , M $\Omega$ : 1000k $\Omega$ .
- Voltages are dc with respect to ground unless otherwise noted.

### • Semiconductor Lead Layouts

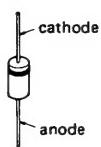
2SK377-K



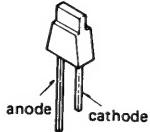
2SC1020H  
2SC2785



1S1555



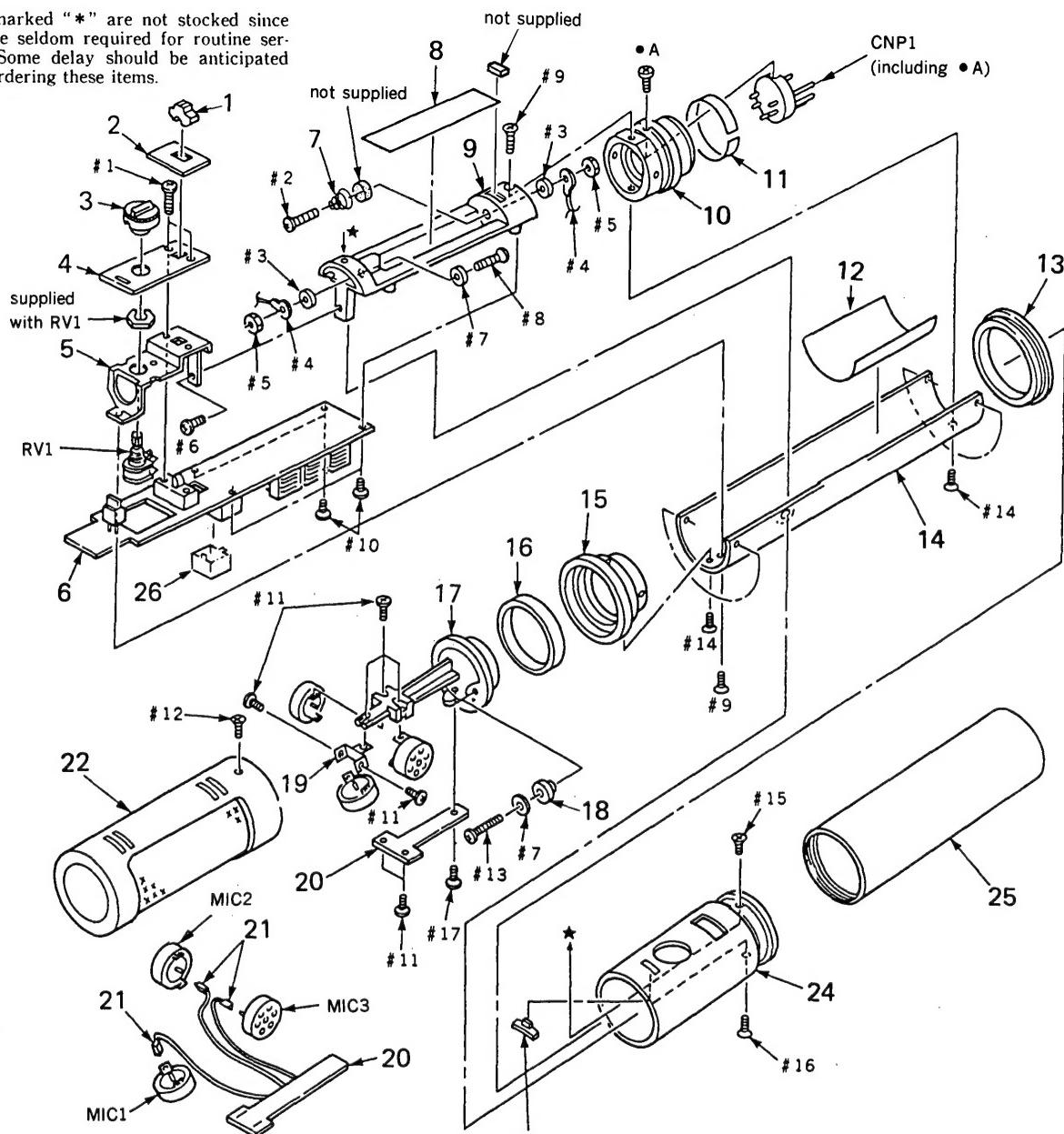
SLP141B



## EXPLODED VIEW AND PARTS LIST

## NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.



Ref. No.	Part No.	Description
1	2-259-709-11	KNOB, SWITCH
2	5-259-725-00	COVER, SWITCH
3	2-529-846-11	KNOB, VOLUME
* 4	2-529-742-01	PLATE, LED
* 5	2-529-843-01	BRACKET, VOLUME
* 6	1-622-146-11	CONTROL BOARD
7	2-527-097-00	SPRING
8	2-523-710-00	LABEL, BATTERY
9	5-529-731-00	PLATE, BATTERY
10	5-529-839-01	SLEEVE, CONNECTOR
11	2-543-315-01	LABEL, MODEL NUMBER (ECM-999PR)
11	2-543-133-01	LABEL, MODEL NUMBER (ECM-999)
* 12	2-529-847-01	PLATE, SHIELD
* 13	2-529-837-11	COVER, CASE
* 14	2-529-841-01	CHASSIS
* 15	2-529-836-01	JOINT, CASE

Ref. No.	Part No.	Description
16	2-529-728-00	CUSHION (A), BASE
17	2-529-732-00	BASE, CAPSULE
18	2-529-729-00	CUSHION (B), BASE
* 19	2-529-845-01	BRACKET, CAPSULE
* 20	1-622-147-11	UNIT BOARD
21	2-253-713-00	TERMINAL
22	X-2542-069-1	GRILLE ASSY
23	2-529-706-00	COVER, LED
24	2-529-838-01	CASE, CONTROL
25	2-543-132-01	GRIP
* 26	2-529-844-01	CASE, SHIELD
* CNP1	1-560-490-00	PIN, CONNECTOR 5P
MIC1	X-2542-076-1	CAPSULE KIT
MIC2		
MIC3		
RV1	1-226-904-00	RES, VAR, CARBON 50K/50K

## CONTROL

## ELECTRICAL PARTS LIST

## NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS  
All resistors are in ohms.  
METAL: Metal-film resistor.  
METAL OXIDE: Metal oxide-film resistor.  
F: nonflammable

● Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

## ● SEMICONDUCTORS

In each case,  $\mu$ :  $\mu$ , for example:  
 $\mu A$  .. :  $\mu A$ .     $\mu PA$  .. :  $\mu PA$ .  
 $\mu PB$  .. :  $\mu PB$ .     $\mu PC$  .. :  $\mu PC$ .     $\mu PD$  .. :  $\mu PD$ .

## ● CAPACITORS

$\mu F$ :  $\mu F$

## ● COILS

$\mu H$ :  $\mu H$

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark	Ref. No.	Part No.	Description			Remark						
*	1-622-146-11	CONTROL BOARD						< RESISTOR >									
*****																	
< CAPACITOR >																	
*****																	
C1	1-131-375-00	TANTALUM	4.7uF	10%	10V	R1	1-249-433-11	CARBON	22K	5%	1/4W						
C2	1-131-375-00	TANTALUM	4.7uF	10%	10V	R2	1-249-441-11	CARBON	100K	5%	1/4W						
C3	1-130-487-00	MYLAR	0.022uF	5%	50V	R3	1-249-435-11	CARBON	33K	5%	1/4W						
C4	1-130-481-00	MYLAR	0.0068uF	5%	50V	R4	1-249-440-11	CARBON	82K	5%	1/4W						
C5	1-131-375-00	TANTALUM	4.7uF	10%	10V	R5	1-247-895-00	CARBON	470K	5%	1/4W						
C6	1-131-375-11	TANTALUM	4.7uF	10%	10V	R6	1-247-895-00	CARBON	470K	5%	1/4W						
C7	1-131-375-00	TANTALUM	4.7uF	10%	10V	R7	1-249-434-11	CARBON	27K	5%	1/4W						
C8	1-131-375-00	TANTALUM	4.7uF	10%	10V	R8	1-249-433-11	CARBON	22K	5%	1/4W						
C9	1-130-487-00	MYLAR	0.022uF	5%	50V	R9	1-249-433-11	CARBON	22K	5%	1/4W						
C10	1-130-481-00	MYLAR	0.0068uF	5%	50V	R10	1-249-440-11	CARBON	82K	5%	1/4W						
C11	1-131-375-00	TANTALUM	4.7uF	10%	10V	R11	1-247-895-00	CARBON	470K	5%	1/4W						
C12	1-131-353-00	TANTALUM	10uF	20%	35V	R12	1-247-895-00	CARBON	470K	5%	1/4W						
C13	1-126-163-11	ELECT	4.7uF	20%	50V	R13	1-249-434-11	CARBON	27K	5%	1/4W						
C14	1-162-163-11	ELECT	4.7uF	20%	50V	R14	1-247-855-11	CARBON	10K	5%	1/4W						
C15	1-161-039-00	CERAMIC	0.001uF	10%	50V	R15	1-247-846-11	CARBON	4.3K	5%	1/4W						
C16	1-131-353-00	CERAMIC	10uF	20%	35V	R16	1-247-887-00	CARBON	220K	5%	1/4W						
C17	1-124-584-00	ELECT	100uF	20%	10V	R17	1-249-431-11	CARBON	15K	5%	1/4W						
< DIODE >																	
D1	8-719-911-19	DIODE	ISS119			S1	1-553-414-21	SWITCH, SLIDE (POWER/LOW CUT)									
D2	8-719-938-45	DIODE	SLP141B-51														
< TRANSISTOR >																	
Q4	8-729-119-78	TRANSISTOR	2SC2785-HFE			T1	1-427-582-11	TRANSFORMER, OUTPUT									
Q5	8-729-119-78	TRANSISTOR	2SC2785-HFE			T2	1-427-583-11	TRANSFORMER, OUTPUT									
Q6	8-729-119-78	TRANSISTOR	2SC2785-HFE			T3	1-427-583-11	TRANSFORMER, OUTPUT									
Q7	8-729-102-14	TRANSISTOR	2SD1021			T4	1-448-874-11	TRANSFORMER, DC-DC CONVERTER									
Q8	8-729-119-78	TRANSISTOR	2SC2785-HFE														
Q9	8-729-119-78	TRANSISTOR	2SC2785-HFE														

**UNIT**

Ref. No.	Part No.	Description	Remark
*	1-622-147-11	UNIT BOARD	*****

2-523-713-00 TERMINAL  
7-623-505-01 LUG, 2

## &lt; TRANSISTOR &gt;

Q1 8-729-824-20 TRANSISTOR 2SK377-K1  
Q2 8-729-824-20 TRANSISTOR 2SK377-K1  
Q3 8-729-824-20 TRANSISTOR 2SK377-K1

\*\*\*\*\*

## MISCELLANEOUS

CNP1 1-560-490-00 PIN, CONNECTOR 5P  
 MIC1 }  
 MIC2 } X-2542-076-1 CAPSULE KIT  
 MIC3 }  
 RV1 1-226-904-00 RES, VAR, CARBON 50K/50K

\*\*\*\*\*

\*\*\*\*\*  
**HARDWARE LIST**  
 \*\*\*\*\*

- #1 7-627-552-47 SCREW, PRECISION +P 1.7X4
- #2 7-621-255-42 SCREW +P 2X6
- #3 7-623-420-07 LW 2, TYPE B
- #4 7-623-505-01 LUG, 2
- #5 7-622-205-05 NUT M2 TYPE2
  
- #6 7-685-102-21 SCREW +P 2X4 TYPE2 SLIT
- #7 7-688-001-01 W 2. MIDDLE
- #8 7-621-255-72 SCREW +P 2X12
- #9 7-627-452-38 SCREW, PRECICION +K 2X5
- #10 7-621-255-15 SCREW +P 2X3
  
- #11 7-627-551-67 SCREW, PRECISION +P 1.4X3.5
- #12 7-627-452-28 SCREW, PRECISION +RK 2X4
- #13 7-621-256-05 SCREW +P 2X16
- #14 7-627-452-17 SCREW, PRECISION +K 2X3
- #15 7-627-452-18 SCREW, PRECICION +K 2X3
  
- #16 7-627-452-58 SCREW +K 2X6 TYPE1
- #17 7-685-102-21 SCREW +P 2X4 TYPE2 SLIT

Ref. No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS	*****

1-696-451-11 CABLE, MICROPHONE (2 CORE)  
1-696-566-11 CORD, MICROPHONE (DIA. 5) (2 CORE)  
(ECM-999)  
2-100-951-04 ADAPTER, SCREW, STAND (SAD-34)  
2-100-952-00 ADAPTER, SCREW, STAND (SAD-35)  
\* 2-543-210-01 INDIVIDUAL CARTON (ECM-999)  
  
 \* 2-543-335-01 INDIVIDUAL CARTON (ECM-999PR)  
3-755-503-11 MANUAL, INSTRUCTION (ENGLISH, FRENCH,  
SPANISH, GERMAN, DUTCH, SWEDISH, ITALIAN,  
PORTUGUESE)  
A-4580-007-A SCREEN ASSY, WINDOW  
X-2529-802-1 HOLDER ASSY, MICROPHONE

**9-957-493-12**

**Sony Corporation  
Consumer A & V Products Company  
Personal A & V Products Div.**

**English  
94J04056-1  
Printed in Japan  
© 1994. 10**

# ECM-999/999PR

## SONY® SERVICE MANUAL

US Model  
Canadian Model

AEP Model

E Model

ECM-999

US Model

E Model

ECM-999PR

## SUPPLEMENT-1

File this supplement with the service manual.

**Subject:** CORRECTION  
CHANGE THE PC BOARD

(ENG-95026)

### 1. CORRECTION

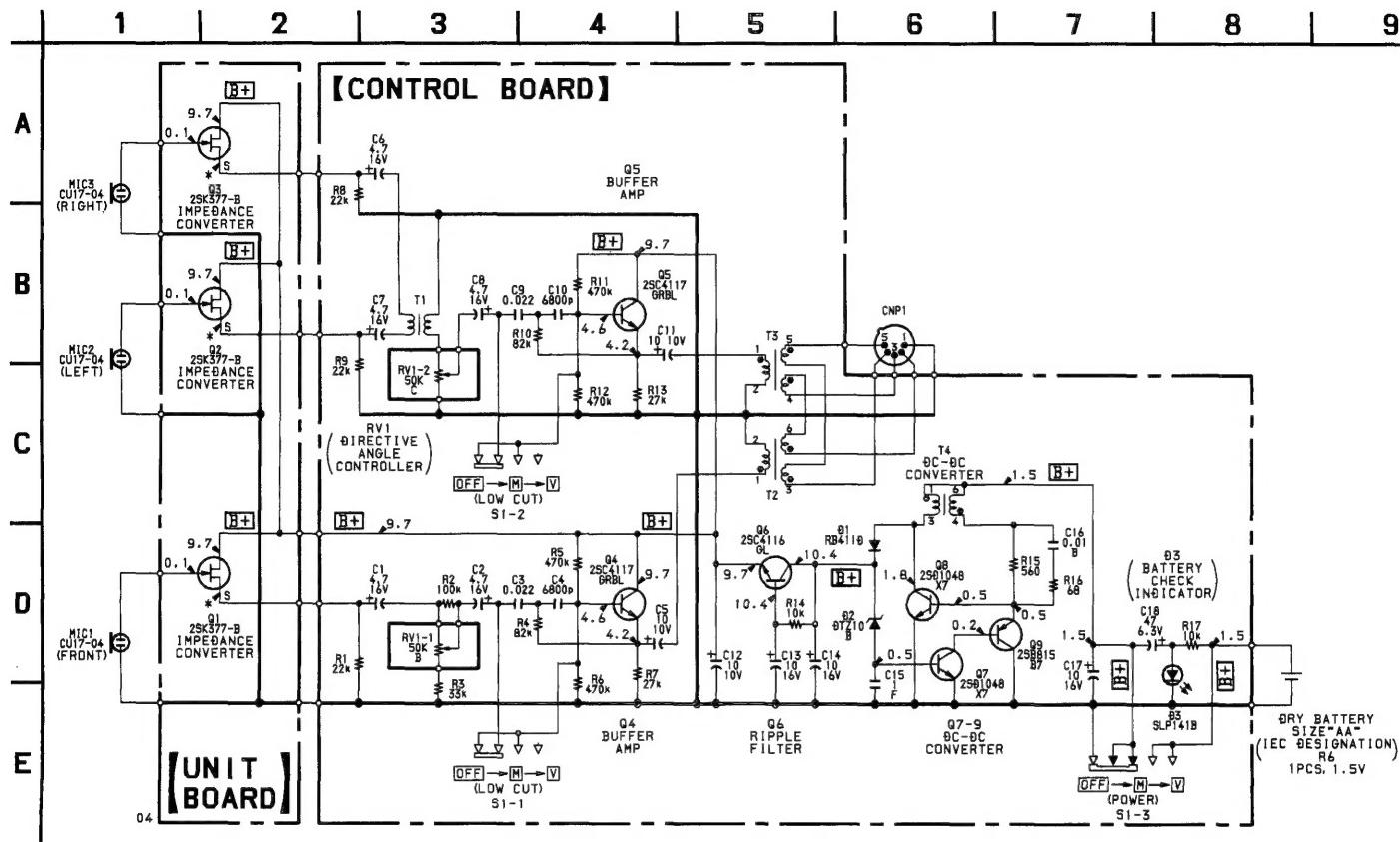
 : indicates corrected portion.

Page	INCORRECT				CORRECT			
	Ref. No.	Part No.	Description	Remark	Part No.	Description	Remark	
7	* 4	2-529-742-01	PLATE, LED		* 2-529-842-01	PLATE, LED		
	9	5-529-731-00	PLATE, BATTERY		2-529-731-00	PLATE, BATTERY		
	10	5-529-839-01	SLEEVE, CONNECTOR		2-529-839-01	SLEEVE, CONNECTOR		

### 2. EXPLODED VIEW

Page	Former Type				New Type			
	Ref. No.	Part No.	Description	Remark	Part No.	Description	Remark	
7	* 6	1-622-146-11	CONTROL BOARD		* 1-658-256-11	CONTROL BOARD		
	* 26	2-529-844-01	CASE, SHIELD		_____			

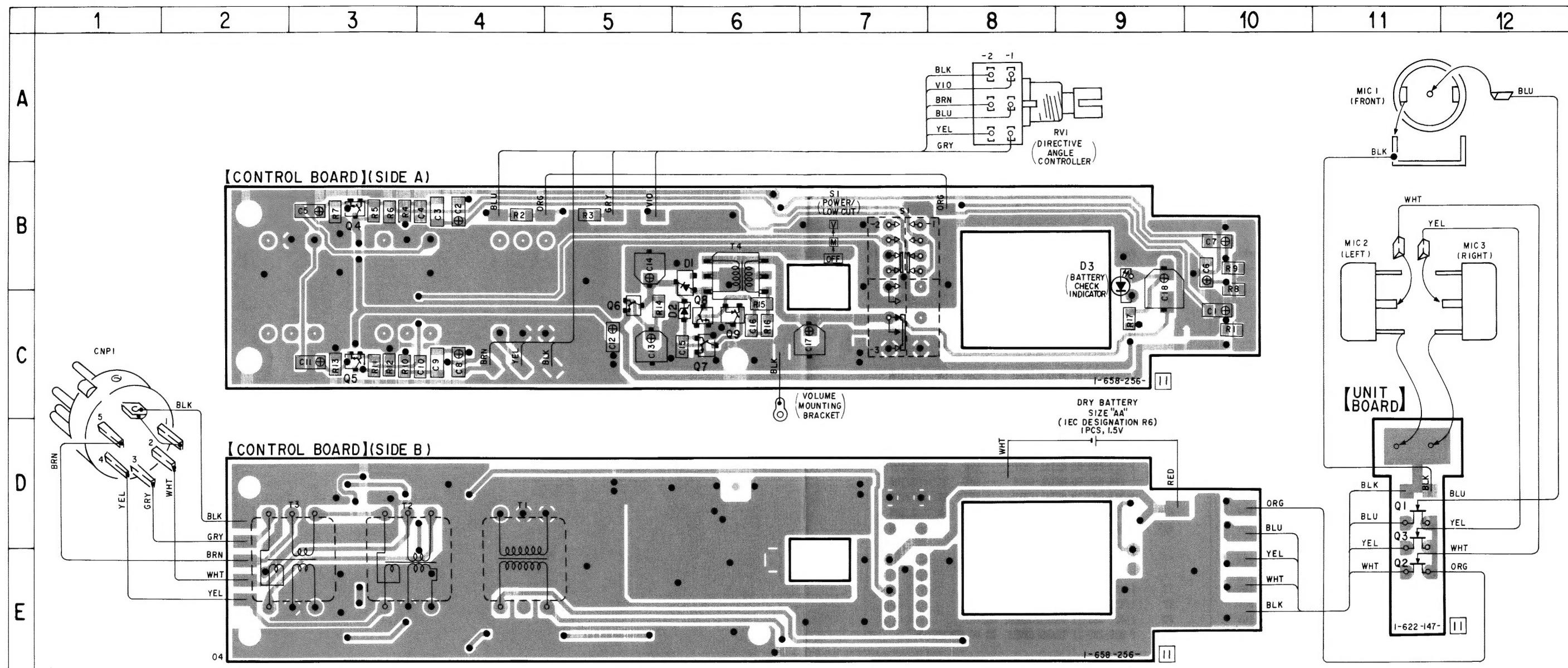
## 3. SCHEMATIC DIAGRAM



## Note :

- All capacitors are in  $\mu\text{F}$  unless otherwise noted. pF :  $\mu\mu\text{F}$  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and 1/4 W or less unless otherwise specified.
- $\boxed{\text{B}+}$  : B+ Line
- Power voltage is dc 1.5V and fed with regulated dc power supply from battery terminal.
- Voltage is dc with respect to ground under no-signal conditions.
- no mark: POWER: M  
\* : Impossible measurement point
- Voltages are taken with a VOM (Input Impedance 10M $\Omega$ ). Voltage variations may be noted due to normal production tolerances.

## 4. PRINTED WIRING BOARDS



## • Semiconductor Location

Ref. No.	Location
D1	B-6
D2	C-6
D3	B-9
Q1	D-11
Q2	E-11
Q3	D-11
Q4	B-3
Q5	C-3
Q6	C-5
Q7	C-6
Q8	C-6
Q9	C-6

## Note :

- — : parts extracted from the conductor side.
- ● : Through hole.
- ■ : Pattern on the side which is seen.  
(The other layer's patterns are not indicated.)

# CONTROL UNIT

## 5. ELECTRICAL PARTS LIST

### NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS  
All resistors are in ohms.  
METAL: Metal-film resistor.  
METAL OXIDE: Metal oxide-film resistor.  
F: nonflammable

● Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

When indicating parts by reference number, please include the board.

### ● SEMICONDUCTORS

In each case, u: $\mu$ , for example:

uA :  $\mu$ A . uPA :  $\mu$ PA .

uPB :  $\mu$ PB . uPC :  $\mu$ PC . uPD :  $\mu$ PD .

### ● CAPACITORS

uF :  $\mu$ F

### ● COILS

uH :  $\mu$ H

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
*	1-658-256-11	CONTROL BOARD	*****			R3	1-216-085-00	METAL CHIP	33K	5%	1/10W
			< CAPACITOR >			R4	1-216-095-00	METAL CHIP	82K	5%	1/10W
C1	1-107-686-11	TANTAL. CHIP	4.7uF	20%	16V	R5	1-216-113-00	METAL CHIP	470K	5%	1/10W
C2	1-107-686-11	TANTAL. CHIP	4.7uF	20%	16V	R6	1-216-113-00	METAL CHIP	470K	5%	1/10W
C3	1-104-555-11	FILM CHIP	0.022uF	5%	16V	R7	1-216-083-00	METAL CHIP	27K	5%	1/10W
C4	1-104-549-11	FILM CHIP	0.0068uF	5%	16V	R8	1-216-081-00	METAL CHIP	22K	5%	1/10W
C5	1-104-851-11	TANTAL. CHIP	10uF	20%	10V	R9	1-216-081-00	METAL CHIP	22K	5%	1/10W
C6-8						R10	1-216-095-00	METAL CHIP	82K	5%	1/10W
	1-107-686-11	TANTAL. CHIP	4.7uF	20%	16V	R11	1-216-113-00	METAL CHIP	470K	5%	1/10W
C9	1-104-555-11	FILM CHIP	0.022uF	5%	16V	R12	1-216-113-00	METAL CHIP	470K	5%	1/10W
C10	1-104-549-11	FILM CHIP	0.0068uF	5%	16V	R13	1-216-083-00	METAL CHIP	27K	5%	1/10W
C11	1-104-851-11	TANTAL. CHIP	10uF	20%	10V	R14	1-216-073-00	METAL CHIP	10K	5%	1/10W
C12	1-104-851-11	TANTAL. CHIP	10uF	20%	10V	R15	1-216-043-00	METAL CHIP	560	5%	1/10W
C13	1-124-779-00	ELECT CHIP	10uF	20%	16V	R16	1-216-021-00	METAL CHIP	68	5%	1/10W
C14	1-124-779-00	ELECT CHIP	10uF	20%	16V	R17	1-216-073-00	METAL CHIP	10K	5%	1/10W
C15	1-164-346-11	CERAMIC CHIP	1uF		16V						
C16	1-164-232-11	CERAMIC CHIP	0.01uF		50V						
C17	1-124-779-00	ELECT CHIP	10uF	20%	16V						
C18	1-126-205-11	ELECT CHIP	47uF	20%	6.3V						
			< TRANSFORMER >								
D1	8-719-975-40	DIODE	RB411D			T1	1-427-582-11	TRANSFORMER, OUTPUT			
D2	8-719-977-28	DIODE	DTZ10B			T2	1-427-583-11	TRANSFORMER, OUTPUT			
D3	8-719-938-45	LED	SLP141B-51			T3	1-427-583-11	TRANSFORMER, OUTPUT			
			(BATTERY CHECK INDICATOR)			T4	1-429-239-11	TRANSFORMER, DC-DC CONVERTER			
			< SWITCH >								
S1	1-553-414-21	SWITCH, SLIDE	(POWER/LOW CUT)	*****							
*	1-622-147-11	UNIT BOARD		*****							
				2-523-713-00 TERMINAL							
				7-623-505-01 LUG, 2							
			< TRANSISTOR >								
Q4	8-729-013-33	TRANSISTOR	2SC4117-GRBL-TE85L			Q1	8-729-031-76	TRANSISTOR	2SK377-B		
Q5	8-729-013-33	TRANSISTOR	2SC4117-GRBL-TE85L			Q2	8-729-031-76	TRANSISTOR	2SK377-B		
Q6	8-729-231-74	TRANSISTOR	2SC4116-GL			Q3	8-729-031-76	TRANSISTOR	2SK377-B		
Q7	8-729-800-37	TRANSISTOR	2SD1048-X7								
Q8	8-729-800-37	TRANSISTOR	2SD1048-X7								
Q9	8-729-800-73	TRANSISTOR	2SB815B7-TA								
			< RESISTOR >								
R1	1-216-081-00	METAL CHIP	22K	5%	1/10W						
R2	1-216-097-00	METAL CHIP	100K	5%	1/10W						

Ref. No.	Part No.	Description	Remark
MISCELLANEOUS			
*****			
* CNP1	1-560-490-00	PIN, CONNECTOR 5P	
MIC1-3			
	X-2542-076-1	CAPSULE KIT	
RV1	1-226-904-00	RES, VAR, CARBON 50K/50K (DIRECTIVE ANGLE CONTROLLER)	

**9-957-493-81**

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Consumer A & V Products Company  
Personal A & V Products Div.**

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